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Minority stress and safer sex practices among sexual minority women in Toronto, Canada:
Results from a cross-sectional internet-based survey

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Running head: Minority stress and safer sex for SMW

Abstract

Purpose: Sexual stigma is a chronic stressor that enhances vulnerability to mental health

disparities among lesbian, gay, bisexual, and queer people. Sexual stigma has also been

associated with reduced uptake of safer sex practices, such as condom use, among gay and

bisexual men. Scant research has examined the relationship between sexual stigma and safer sex

practices among sexual minority women (SMW), including lesbian, bisexual and queer women.

Methods: We explored associations between sexual stigma and safer sex practices among SMW.

We also tested the interaction between sexual stigma, social support, and resilient coping in this

relationship. A cross-sectional internet-based survey was administered to SMW in Toronto,

Canada.

Results: Among 388 participants with complete measurement data, simple linear regression

indicated both perceived and enacted sexual stigma were positively associated with uptake of

safer sex practices. In multivariable analyses, significant interactions were found between

perceived sexual stigma and resilient coping, and between enacted sexual stigma and social

support. At low levels of resilient coping, higher levels of perceived sexual stigma were

associated with fewer safer sex practices, while at high levels of resilient coping the

relationship was reversed. At low levels of social support, higher levels of enacted sexual stigma

were associated with fewer safer sex practices, while at high levels of social support the

relationship was reversed.

Conclusions: These findings document complex relationships between sexual stigma

dimensions, coping, social support, and safer sex practices. Understanding the role these

variables play in uptake of safer sex practices can inform sexual health interventions tailored for

SMW..

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Keywords: discrimination, minority stress, prevention, sexual minority women, sexual stigma, STD

Introduction

Approximately one-fifth of lesbian, bisexual, queer (LBQ) and other sexual minority women (SMW) – a diverse community of women attracted to other women, people of multiple genders, transgender, and gender fluid persons – have a lifetime history of sexually transmitted infections (STIs), similar to STI infection rates among heterosexual women.¹⁻⁴ Yet perceptions that SMW are at low risk for STI and HIV acquisition persist and contribute to a paucity of research on safer sex practices among SMW.^{2,5-8}

The limited research examining sexual practices among SMW has revealed inconsistent uptake of safer sex strategies.^{9,10} For example, a multi-country study with SMW reported low barrier use (<25%) among participants.¹⁰ There is limited understanding, however, of the type and frequency of safer sex strategies used by SMW or factors associated with uptake of safer sex practices. This information could guide intervention development to increase uptake of safer sex practices among SMW. Stigma and discrimination may constrain or enable safer sex practices.^{11,12} Understanding associations between stigma and discrimination and safer sex practices among SMW can inform tailored STI prevention strategies for this overlooked population.

Theoretical approach

Sexual stigma refers to social and institutional processes and structures that devalue and limit access to power and opportunities among lesbian, gay, bisexual, transgender, and queer (LGBTQ) people and communities.^{13,14} Meyer's minority stress model^{14,15} conceptualizes socio-cognitive processes by which sexual stigma experienced by LGBTQ people is a chronic, cumulative stressor that negatively affects health and wellbeing. The minority stress model includes distal processes, such as *enacted stigma*, whereby people experience acts of violence and unequal treatment (e.g. harassment), and proximal processes, such as *perceived (also*

referred to as *felt*) *stigma*, whereby people experience concerns of rejection and negative treatment by others because of actual or perceived LGBTQ identity, and *internalized stigma*, whereby people may experience feelings of shame and self-blame.¹³⁻¹⁶

The stress of sexual stigma contributes to mental health disparities among LGBTQ populations.^{14,17,18} Conceptualizations of distal (enacted sexual stigma) and proximal (perceived sexual stigma) stressors have been applied to understand mental health outcomes, including suicidality and substance use,^{19,20} across various contexts.²¹ There is growing attention to sexual stigma as a structural driver of HIV disparities.^{11,22} Stigma may influence both individual and group level HIV and STI vulnerability by reducing uptake of safer sex practices (e.g. condom use) and access to sexual health services (e.g. STI testing).^{12,13} A meta-analysis of 16 studies reported correlations between internalized stigma and sexual risk practices among gay, bisexual, and other men who have sex with men (MSM).²³ Peer victimization, a form of enacted sexual stigma targeting LGBTQ youth, has been associated with sexual risk practices among grouped samples of young LGBTQ youth of diverse genders and sexual orientations.^{24,25} Few studies have explored the relationship between perceived sexual stigma and sexual risk practices. However, one study that pooled over 3000 MSM respondents from 115 countries reported that perceived sexual stigma was associated with significantly reduced access to free condoms, free lubricants, and HIV testing.²⁶

Coping and social support have long been recognized as resources that may affect the association between stress-initiated psychological processes such as stigma and poor mental health.²⁷ Meyer's minority stress model¹⁴ posited that coping and social support could moderate the influence of minority stress stigma on mental health outcomes. A sense of belonging to

LGBTQ communities might foster support and solidarity that could contribute to developing adaptive coping mechanisms such as resilience.¹⁴

While social support and stigma may moderate the associations between sexual stigma and mental health outcomes,^{14,17} few studies have explored the relationship between social support and coping and sexual risk practices among LGBTQ populations. Some evidence suggests that maladaptive coping styles effect sexual risk among MSM. Yi et al.²⁸ found that disengagement coping fully mediated the association between internalized sexual stigma and condomless anal intercourse among a U.S. sample of MSM. Literature examining social support, stigma, and sexual risk practices is limited and suggests that social support does not affect sexual risk practices.²⁹ We found no studies that examined coping style or social support and their associations with safer sex practices among SMW. However, one study³⁰ conducted among ‘mostly heterosexual’ compared to ‘exclusively heterosexual’ women found that social support partially mediated the relationship between sexual orientation and sexual risk practices, defined as age at first intercourse, ever having had an STI, or lifetime number of sexual partners.

In summary, knowledge gaps remain regarding enacted and perceived sexual stigma and sexual risk practices among SMW. In addition, little is known about protective factors—such as coping strategies and social support—and their association with safer sex practices among SMW. Our study sought to address these gaps by assessing: a) the frequency and types of safer sex practices used; b) associations between sexual stigma and uptake of safer sex practices; c) interactions between social support and resilient coping with uptake of safer sex practices, among SMW in an urban Canadian setting. Hypotheses included: 1) higher levels of sexual stigma (perceived, enacted) would be associated with lower levels of safer sex practices; 2)

social support and resilient coping would moderate the associations between sexual stigma and safer sex practices.

Materials and Methods

Sampling and recruitment

Between December 2011 and January 2012, we conducted a cross-sectional internet-based survey with SMW in Canada. Inclusion criteria included: adults over 18 years old; self-identified lesbian, bisexual, gay, queer, or other self-defined sexual orientation, and/or same sex attracted self-identified women ; and living in the Greater Toronto Area. We refer to sexual minority women (SMW) in this study; although used in research as an umbrella term for women of multiple sexualities we recognize its limitations in reflecting elements of culture and identity.³¹

Ten peer recruiters (PRs) were purposively selected based on their relationship with the LGBTQ community as service providers, community organizers, and event planners/promoters, as well as self-identification as SMW with diverse sexual identities, ages and ethnicities with the aim of reaching a broad range of SMW. Using a modified peer-driven recruitment strategy,³² each PR aimed to recruit a minimum of 25 participants using a combination of strategies (e.g., in-person, internet). Convenience sampling techniques, including sending emails regarding the study to LGBTQ agencies, community health centers, HIV/STI service organizations, and ethno-cultural agencies, were utilized to enhance recruitment.

The survey was pilot tested in a focus group with PRs, then modified to enhance clarity and appropriateness. Subsequently, participants completed the self-administered 45-60 minute online survey in a location of their choice. Participants could opt to receive a \$20 gift card honorarium. Research ethics approval was granted from Women's College Hospital, Toronto,

Canada. Prior to completing the survey, participants were presented with an online informed consent form. Upon checking ‘yes’ to understanding and providing informed consent, the survey opened. For those participants who chose ‘no’, the survey was terminated.

Measures

The survey assessed socio-demographic information, safer sex practices, and potential individual and structural correlates of safer sex practices. Socio-demographic information including age, ethnicity, education, income, relationship status, gender and gender identity, and gender of sexual partners, was collected. Self-identified sexual orientation was collected using a question with the following mutually exclusive options: lesbian, bisexual, gay, queer, heterosexual, and other sexualities.

The primary outcome of safer sex practices was measured using the ‘Safer Sexual Practices among Lesbian Women’ scale³³ (Cronbach’s $\alpha = 0.67$). One item on bondage, dominance, and sadomasochism was removed per PR feedback in pilot-testing. Items were summed, with a higher score indicating higher utilization of safer sex practices. Individual items in this measure were also used to assess the frequency of specific safer sex practices.

Sexual stigma was assessed using the Homophobia Scale,³⁴ adapted for SMW.³⁵ The perceived sexual stigma sub-scale (possible range: 0-20) consisted of 5 summed items (e.g. ‘How often have you felt your family was hurt and embarrassed because you are lesbian, bisexual or queer?’) and the enacted sexual stigma sub-scale (possible range 0-28) consisted of 7 summed items (e.g. ‘How often have you been hit or beaten up for being lesbian, bisexual or queer?’). Sub-scale reliability was acceptable: perceived sexual stigma sub-scale, (Cronbach’s $\alpha=0.70$), enacted sexual stigma sub-scale, (Cronbach’s $\alpha=0.72$), and overall sexual stigma scale (Cronbach’s $\alpha=0.78$).

Healthcare utilization was assessed by asking whether the participant had undergone an HIV test, STI test, mammogram, Pap smear, or breast exam in the past 2 years. The answers to these 5 items were summed to form a Health Care Utilization score, with each test adding one point to the overall score. A higher score indicated greater use of healthcare services (Cronbach's $\alpha=0.69$). Brief resilient coping was measured using Sinclair et al.'s³⁶ Brief Resilient Coping scale (Cronbach's $\alpha=0.69$) (range: 4-20). This scale consists of 4 items (e.g. 'I believe that I can grow in positive ways by dealing with difficult situations').³⁶ A higher score indicates higher resilient coping, reflecting belief in one's ability to overcome adverse circumstances.³⁶ Social support was assessed using the Multidimensional Scale of Perceived Social Support, a 12- item questionnaire (Cronbach's $\alpha=0.91$) that assesses support from family, friends, and a significant other³⁷ (range: 12-60). The scale includes items such as 'I can talk about my problems with my friends', with a higher score indicating a higher amount of perceived social support from multiple sources.

Statistical analysis

All statistical analysis was performed in Stata 14.³⁸ We conducted descriptive analyses of socio-demographic variables as well as the outcome and exposure variables, utilizing means and standard deviations for continuous variables and frequencies and proportions for categorical variables. There were 466 women who participated in the internet-based survey. The dataset for this analysis was restricted to the 388 participants who responded to all questions on the Safer Sexual Practices among Lesbian Women scale. Socio-demographic characteristics of included participants were compared to those not included using a Welch two-sample t-test for continuous variables and Fisher's exact test for categorical variables.

In the analytic sample, the distributions of individual safer sex practices were summarized overall and by gender of sexual partners; chi-squared tests were used to compare the

distribution by different categorical variables. Simple linear regression was used to assess the unadjusted association of perceived and enacted sexual stigma, as well as socio-demographic characteristics and social support and resilient coping with an individuals' safer sex practices score.

A multivariable linear regression model was fit to the data based on the hypothesized relationship between minority stress and safer sex practices. This model posited that both perceived and enacted sexual stigma would be associated with reduced safer sex practices, and that social support and resilient coping would reduce the strength of the negative associations between sexual stigma and safer sex practices. Reported history of a male partner, current relationship status, and healthcare utilization were included as potential confounders and therefore control variables. All variables were kept in the model and statistical significance of interactions were tested using the likelihood ratio test.

Results

Participant socio-demographic characteristics

Participant sociodemographic characteristics are summarized in Table 1. Participants ranged in age from 18 to 70, with a mean age of 31.2 (SD: 8.0). The majority of participants identified as either queer (45.5%) or lesbian (30.1%). A total of 121 women, including participants from each category of self-identified sexual orientation, reported a history of at least one male sex partner. Sexual practices and main outcome variables are presented in Table 2. Participants reported a mean of 20.4 (SD 32.7) lifetime sexual partners. Approximately one-fifth (21.8%) of participants reported either living with an STI currently or having an STI in the past. Participants included in the analysis did not differ significantly in socio-demographic characteristics or main outcomes scores from participants excluded from analyses (not shown).

Ninety-one percent of respondents reported at least one instance of enacted sexual stigma and over 99% of respondents reported at least one instance of perceived sexual stigma. Mean scores for enacted and perceived sexual stigma were 3.5 (SD 2.7) and 8.4 (SD 3.5), respectively.

Uptake of safer sex practices

A summary of uptake of specific safer sex practices for women who did and did not report having male partners is presented in Table 3. The uptake of individual safer sex practices by relationship status is presented in Table 4. Women in polyamorous relationships or with multiple partners reported the highest uptake (always/sometimes use) of safer sex strategies for half of the items, with the exception of use of dental dams, use of saran wrap, cutting condoms open for oral sex and not having sex during her/her partners' menstruation.

Associations between sexual stigma and safer sex practices

The unadjusted relationships between variables and safe sex scores can be seen in Table 5. Simple linear regression revealed that contrary to our hypotheses, perceived and enacted sexual stigma were each *positively* associated with uptake of safer sex practices ($p < 0.01$). For example, an 8-point increase on the perceived sexual stigma sub-scale or a 6-point increase on the enacted sexual stigma sub-scale were each associated with an average of approximately one additional safe sex practice.

The results of the multivariable model exploring the relationship between sexual stigma and safer sex practices while controlling for potential confounding factors can be seen in Table 6. In multivariable modeling, no significant interactions were found between enacted sexual stigma and resilient coping, nor between perceived sexual stigma and social support. However, significant interactions were found between enacted sexual stigma and social support as well as between perceived sexual stigma and resilient coping. Social support and resilient coping were

maintained as continuous variables for the multivariable modeling. To demonstrate the interactions, the associations between enacted and perceived stigma at 3 different levels of social support or resilient coping, respectively, have been graphically depicted in Figures 1 and 2. At lower levels of resilient coping, increasing levels of perceived sexual stigma were associated with fewer safer sex practices while at higher levels of resilient coping, the relationship was reversed (Figure 1). Similarly, at lower levels of social support, increasing levels of enacted sexual stigma were associated with fewer safer sex practices while at higher levels of social support, the direction of association was reversed (Figure 2).

Discussion

Our study is one of the first to apply the minority stress model to better understand uptake of safer sex practices among SMW. We identified complex relationships between dimensions of sexual stigma (enacted, perceived), resilient coping, social support and safer sex practices that suggest the utility of the minority stress model for understanding safer sex practices among SMW.

Our findings are congruent with the minority stress model that posits that coping and social support can moderate the relationship between stressors targeting LGBT people and health outcomes.¹⁴ We found that levels of coping and social support significantly influenced the relationship between sexual stigma and safer sex practices. Participants with lower adaptive coping levels reported reduced safer sex practices when experiencing perceived stigma. This finding builds on prior studies with MSM that demonstrated maladaptive coping mediated the relationship between internalized sexual stigma and condomless sex among MSM.²⁸ It is possible that higher resilient coping—positive adaptations to stress³⁶—could play a larger role in moderating the effect of perceived stigma, in comparison with enacted stigma, because perceived

stigma is rooted in perceptions and fears of mistreatment. These perceptions may be more amenable to the intrapersonal processes in resilient coping than experiences of physical or verbal harassment experienced in enacted stigma. Disentangling how coping styles may mitigate dimensions of sexual stigma warrants further investigation.

Social support level also resulted in differences in safer sex practices. It is plausible that high levels of support from family, friends, and a significant other could lead to support, solidarity, and community connectedness when someone experiences enacted stigma.³⁹ Future research should explore the role of supportive ties in mitigating impacts of stressors such as sexual stigma on safer sex practices.

Our study found that the relationship between sexual stigma and safer sex practices reverses rather than disappears with higher levels of coping/social support. This suggests a type of resilience borne from having social support or coping skills that “turn up” when exposed to sexual stigma, such that one is more likely to practice safer sex. This seems consistent with literature that suggests manageable stress levels may not be harmful, and in fact can promote resilience, whereas chronic, higher levels of stress cause psychobiological harms.⁴⁰ There is a need for additional research on psychobiological effects of different types and levels of sexual stigma.

Similarly to Schick et al.,¹⁰ we found that under half of participants responded that they consistently do not share sex toys. Richters et al.⁴¹ investigated SMW’s dental dams usage during sex (n=543) and found approximately 10% had used a dental dam during oral sex in the previous 5 months and 2% had used one often.⁴¹ Our findings are consistent in that 2% of women report always using a dental dam. Our study also highlights that most SMW know about, but do not use, barriers, during sex. Future qualitative research may explore barriers to practising safer sex

and strategies to enhance uptake of safer sex practices. Another potential explanation for associations between sexual stigma and safer sex practices is that individuals with increased stigma may have fear or discomfort regarding same sex sexual contact; this is an area for future research as well.

Our study also highlights the role of relationship status and safer sex uptake among SMW. Richters et al.⁴¹ found that dental dam use was lower among women with more sexual partners, or women who had casual or group sex. Contrary to these findings, we found that women in polyamorous relationships or with multiple partners had the highest uptake of safer sex strategies, with married women reporting the least. Schick et al.¹⁰ also reported that women not in a relationship were more likely to report using a condom on a shared dildo. Further research is needed to understand the role that relationship type plays in practising safer sex.

Uptake of safer sex practices was also correlated with increased healthcare utilization, suggesting that routine primary care check-ups may provide an opportunity for healthcare providers to discuss safer sex practices among SMW.⁴²

From a practice perspective, our findings also suggest that interventions to address resilient coping and social support for SMW may mitigate the effect of sexual stigma on sexual risk practices. There is a dearth of interventions to address safer sex strategies among SMW.^{2,5,6,43} A group-based STI prevention intervention with SMW in Canada reported a sustained decrease in sexual risk practices and sexual stigma, yet was not able to effect sustained changes in resilient coping or social support.⁴⁴ Intervention research could further explore strategies to affect cognitive and social factors implicated in SMW's uptake of safer sex practices.

There are several study limitations. First, the cross-sectional design precludes making causal inferences between sexual stigma and safer sex practices. Second, an equal weight was applied to all practices in the Safer Sex Practices among Lesbian Women Scale. It should be noted that not all practices promote sexual safety equally, and a more nuanced analysis could explore associations between stigma and specific practices. For example, are women with less perceived stigma more sexually comfortable and more likely to discard less effective safe sex practices? Third, while all included measures had adequate reliability and have been previously used in studies with SMW, future studies may aim to study how these measures may be improved. Fourth, measures were self-reported and social desirability bias may have influenced responses. Fifth, generalizability is limited due to the non-probability sampling strategy. Our sample reflected predominantly white and highly educated participants, underrepresenting racial/ethnic minority women and those with less than university education. This could be due to the online survey method, biased to include people with internet access.⁴⁵

Despite these limitations, our study has strengths. To our knowledge, it is the first to apply minority stress theory to understand safer sex practices among SMW. Another strength is our use of a comprehensive measure of safer sex sexual practices that accounts for the many ways women have sex with women.

Conclusions

From a theoretical perspective, we found congruence with the minority stress model in terms of social support and resilient coping as moderators in the relationship between stressors targeting LGBT people and health outcomes.¹⁴ Yet we report complex relationships, whereby social support level changed the nature of the association between enacted stigma and safer sex practices, and resilient coping level altered the association between perceived stigma and safer

sex practices. These findings challenge the current theoretical understanding that higher sexual stigma is necessarily associated with lower uptake of safer sex strategies. Further research is needed to empirically test theoretical reasons for these complex associations. For example, does discrimination provide opportunities to solidify social support? If so, could there be a third factor such as self-esteem that influences safer sex practices uptake? Are women who cope well with perceived stigma more likely to notice stigma, cope well, and to practice safer sex? Future studies should address intersectionality and the effect of multiple forms of stigma (e.g. racism) on safer sex practices and the different needs of sexually diverse women (e.g. bisexual vs. lesbian women).⁴⁶

Our findings document complex relationships between sexual stigma dimensions, coping, social support and safer sex practices that suggest the utility of the minority stress model for understanding safer sex practices among SMW. This evidence can also inform safer sex intervention development for SMW.

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Table 1 Main socio-demographic characteristics of participants

<i>Variables^a</i>		<i>No of participants (%)</i>
Sexual Orientation (n=385)	Queer	175 (45.5)
	Lesbian	116 (30.1)
	Bisexual	62 (16.1)
	Gay	17 (4.4)
	Other	12 (3.1)
	Heterosexual	3 (0.8)
Ethno-racial identity*	White/Caucasian	256 (66.0)
	Black, African/Caribbean	41 (11.1)
	Asian	17 (4.4)
	South Asian	15 (3.9)
	Indigenous/Aboriginal	10 (2.6)
	Caribbean	12 (3.4)
	Latina	13 (3.4)
	Multiple ethnicities	17 (4.4)
	Other ethnicities	31 (8.0)
Education	Less than high school	2 (0.5)
	High school or equivalent	18 (4.6)
	Some college/university	73 (18.8)
	College diploma	48 (12.4)
	Bachelor degree	144 (37.1)
	Graduate degree	103 (26.5)
Relationship status	Dating (living together)	125 (32.2)
	Dating (not living together)	81 (20.9)
	No current partners	45 (11.6)
	Polyamorous/multiple partners	58 (15.0)
	Married	43 (11.1)
	Casual dating	36 (9.3)
		<i>Mean (SD)</i>
Age (n=350)		31.20 (7.97)
		Median: 29.0 (Range: 18-70)
Annual income (n=373)		33,679 (25,648)
		Median: 30,000 (Range: 0-175,000)

^a n=388 unless otherwise specified

* Participants could select more than 1 response

Table 2 Sexual practices and main outcome variables among participants

<i>Variables^a</i>	Mean (SD)	Number of participants (%)
Healthcare utilization score (n=384)	2.00 (1.1)	
Resilient coping (n=386)	15.9 (2.8)	
Social support (n=378)	47.6 (8.9)	
Perceived sexual stigma	8.4 (3.5)	
Enacted sexual stigma (n=383)	3.5 (2.7)	
Lifetime sexual partners	0-5	74 (19.1)
	6-10	99 (25.5)
	11-15	66 (17.0)
	16-20	37 (9.5)
	21-50	78 (20.1)
	50+	34 (8.8)
Reported history of male partner(s)	Reported at least one male partner	121 (31.2)
Lifetime sexually transmitted infection history (n=363)	Never had an STI	284 (78.2)
	Had STI in the past	59 (16.3)
	Currently living with STI	20 (5.5)

^a n=388 unless otherwise specified

Safer Sex Scale

Enacted Sexual Stigma

High Social Support

Low Social Support

60

15

5

4

3

2

0

2

4

6

8

10

Safer Sex Scale

High Resilient Coping

Low Resilient Coping